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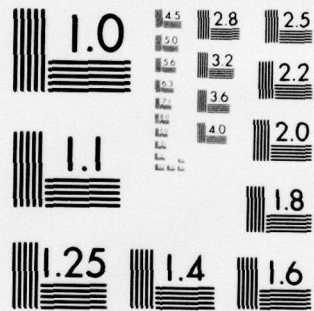
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PROGRESS REPORT II

SENSORY DEPRIVATION

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Reporting Period: 1 December 1955 to 1 March 1956

Contract Number: DA-49-007-MO-671

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FOR THE CHIEF:

A large, stylized handwritten signature in black ink, which appears to read "Alexander Nicolini", is written over the typed name and title.

ALEXANDER NICOLINI
Major, Infantry
R&D Coordinator

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SENSORY DEPRIVATION

PROGRESS REPORT II

Reporting Period: 1 December 1955 to 1 March 1956

ABSTRACT OF REPORT

✓ Data collected on two subjects placed in deprivation for 72 hours each reveal:

(A) The learning of auditory adjective lists showed little improvement probably because the learning task was too simple. Future tasks will be more difficult.

(B) Ss spend a great deal of time during confinement rehearsing the learning tasks so that savings scores on relearning reveal the greatest retention of the material for which there has been the longest opportunity to rehearse. Steps are being taken to prevent rehearsal by a decoy technique.

(C) Data for suggestion as revealed by a Body Sway Test are given. Conclusions not yet possible.

(D) Data for eye wink conditioning given; conclusions not yet possible.

(E) Data for concept learning: auditory, visual, and tactual given. Conclusions not yet possible except that the order of difficulty seems to be auditory most difficult, visual next, and tactual last. ~~The order of presentation was visual, tactual, and auditory.~~

(F) One S reports hallucinations - visual in nature. The other S reports the possible occurrence of auditory hallucinations.

(G) A procedure for a "health" clearance for the subjects to be used in the future is proposed.

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Respectfully submitted,

Jack A. Vernon
Principal Investigator
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Data have been collected on two subjects for 72 hours of confinement each during this report period. While control data are not available for comparison and while it is not desirable to discuss the data of only two subjects, the general findings are, nevertheless, herein presented:

PROJECT I-A-1 LEARNING: AUDITORY; MEANINGFUL

A ten-item adjective list was presented to Ss whose task it was to learn the list to the criterion of one errorless trial. The learning material was presented via tape recording with a two (2) second inter-stimulus interval and learning was indicated by the method of anticipation. Testing was conducted according to Interval Schedule Nine (see Progress Report I, 1 December 1955, under Project I-A-1).

The following table represents trials to criterion for each S.

	Test No.	S I	S II
in con- finement	1	11	7
	2	8	6
	3	6	9
	4	11	7
	5	11	8
	6	6	6
out of confinement	7	8	7
	8	9	6
	9	6	9

It would appear that these data stand in opposition to the findings of the preliminary study where Ss improved in learning rate with continual confinement. It is felt that the lack of any significant improvement in learning rate with the present two Ss results from the fact that the learning task was too easy thus rendering improvement difficult. Consequently, the adjective lists are being revised so as to become 15-item lists. (Twelve-item lists were used in the pilot study.)

That Ss will grasp at almost any kind of material for mental exercise during confinement is indicated by the saving scores for relearning all nine (9) adjective lists at the very end of the test period which is 72 hours after release from confinement. From the scores given below it can be seen that Ss obviously practiced the learning material during confinement and in general the more time available for practice the greater the amount of saving on the relearning. In the future recall scores will be taken at this point before beginning the relearning task.

S I		
	Test No.	Amount of Saving
Lists Learned in Confinement	1	90%
	2	88%
	3	80%
	4	70%
	5	90%
	6	20%
Lists Learned after Confine- ment	7	14%
	8	25%
	9	60%

Due to machine failure savings data are not available for S II. When confronted with the question, S I admitted that he had spent extended periods during confinement practicing the adjective lists, thus it will be necessary to include instructions to attempt to prevent such practice in the future. Or it may be possible to present "decoy" material which will be more attractive to Ss as a means of mental exercise.

PROJECT I-A-2 LEARNING: AUDITORY; CONCEPT FORMATION

S I	S II
90 Trials	151 Trials (no solution)

PROJECT I-V-3 LEARNING: VISUAL; CONCEPT FORMATION

S I	S II
19 Trials	23 Trials

PROJECT I-T-1 LEARNING: TACTUAL; CONCEPT FORMATION

S I	S II
12 Trials	9 Trials

The concept formation problems were presented at the release from confinement in the following order: VISUAL, TACTUAL, and AUDITORY. It will be noted that the rank order of difficulty for both Ss is AUDITORY- VISUAL-TACTUAL.

PROJECT I-C-1 LEARNING: CONDITIONING

Using the eye wink response with sound as the conditioned stimulus. Ss received paired associations for a total of 100 trials. On the average Ss received 5 paired presentations per minute. The point at which the conditioned response first consistently anticipated the unconditioned

stimulus was indicated. This point is given under the heading "conditioning" in the data below. The extinction data are determined only after deprivation, whereas the conditioning data are obtained before deprivation:

	S I	S II
Conditioning	50 Trials	58 Trials
Extinction	3 Trials	3 Trials

The meaning of these data await the comparison of a control group's data.

PROJECT II-S-1 PERSONALITY: SUGGESTION; BODY SWAY

Body Sway Tests of Suggestion:

	S I	S II
Pre-confinement Normal	10mm	40mm
Suggested	17mm	30mm
Post-confinement Normal	15mm	20mm
Suggested	20mm	32mm

In the case of Subject II it appears likely that he was no longer able to resist the suggestion to sway after confinement.

The Figure Suggestion Test (F.G.T.) has been developed and completed during this report period and will be available for the next confinement subject. A description F.S.T. is to be found in Progress Report I, 1 December 1955, under Sub-Project II-S-2.

MISCELLANEOUS COMMENTS:

During 72 hours of confinement S I lost one (1) pound body weight and S II lost five (5) pounds. Each S received 8 meals, where S I consumed 11 sandwiches, 8 doughnuts, and five quarts of milk and S II consumed 11 sandwiches, 7 doughnuts, and 4 quarts of milk. Both report that this constitutes sufficient food.

Both Ss also report that sensory deprivation of 72 hours in extent is not a particularly unpleasant ordeal and that they could have withstood longer confinement. They were able to keep track of time fairly accurately and the anticipation which accrues prior to release may be significant. In an attempt to prevent this anticipation Ss are not told how long confinement will last; they are merely instructed to make available a six day period any part of which may be devoted to confinement.

A. HALLUCINATIONS:

S I reported at the termination of confinement three (3) separate visual hallucinations. All involved the patterning of light, e.g., light shining through a window in the ceiling, etc.

S II reported the occurrences of a "couple of possible auditory hallucinations. They were described in each case as the sound of opening the door leading to the confinement cubicle. S II was not overly confident about the occurrence of these experiences.

B. HEALTH CLEARANCE:

At a recent meeting of the Faculty Committee on Research Projects for Princeton University it was suggested that subjects to serve in the Sensory Deprivation experiment should receive some sort of health clearance. It was further suggested that Dr. W. H. York, Head of Princeton University Infirmary, serve as such a clearing agent. It is felt that such a clearance is necessary to prevent an unfortunate occurrence of some psychotic episode during sensory deprivation but which is not necessarily related to or precipitated by confinement. Thus the attempt is to preclude the inclusion of any imminently pre-psychotic individual as a subject in sensory deprivation.

